

Claims

*Pub A1*

1. A solenoid stator assembly adapted to be mounted upon a mounting seat of a fuel injector valve, comprising:
  - an insulative housing having an upper end, a lower end, and a base adapted to fit on the mounting seat of the fuel injector valve;
  - a substantially E-shaped stator core disposed within the housing, said stator core including:
    - a top portion having a first end and a second end,
    - a first outer pole piece depending generally perpendicularly from said first end,
    - a second outer pole piece depending generally perpendicularly from said second end, and
    - a central pole piece depending generally perpendicularly from a region of the top portion located substantially central to the first and second outer pole pieces and in a direction substantially parallel to that of the first and second outer pole pieces, the first and second outer pole pieces and the central pole piece each having a distal end forming a face, each face being substantially flush with the base of the housing; and
  - a reinforcement band disposed about the lower end of the housing;
- said insulative housing being molded to said stator core and enveloping the stator assembly except for the faces of the first and second outer pole pieces and of the central pole piece, said insulative housing being reinforced by said reinforcement band against expanding cavity pressure developed within the

assembly by fuel pressure within the fuel injector valve.

2. A solenoid stator assembly as recited  
5 in claim 1, wherein said reinforcement band is molded  
in said housing

3. A solenoid stator assembly as recited  
in claim 2, wherein said reinforcement band is  
10 retained in location by an undercut design.

4. A solenoid stator assembly as recited  
in claim 2, wherein said reinforcement band is  
substantially annular.

15 5. A solenoid stator assembly as recited  
in claim 1, wherein said reinforcement band extends a  
predetermined distance upwardly from the base of the  
housing.

20 6. A solenoid stator assembly as recited  
in claim 1, wherein said insulative housing includes  
mounting portions <sup>operative</sup> adapted to receive securing means  
for securing said insulative housing to said fuel  
25 injector valve.

7. A solenoid stator assembly adapted to  
be mounted upon a mounting seat of a fuel injector  
valve, comprising:

30 an insulative housing having an upper end, a  
lower end, and a base adapted to fit on the mounting  
seat of the fuel injector valve;

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                  a substantially E-shaped stator core  
                  disposed within the housing, said stator core  
                  including  
                  a top portion having a first end and a  
5                  second end,  
                  a first outer pole piece depending generally  
                  perpendicularly from said first end,  
                  a second outer pole piece depending  
                  generally perpendicularly from said second end, and  
10                 a central pole piece depending generally  
                  perpendicularly from a region of the top portion  
                  located substantially central to the first and second  
                  outer pole pieces and in a direction substantially  
                  parallel to that of the first and second outer pole  
15                 pieces, the first and second outer pole pieces and the  
                  central pole piece each having a distal end forming a  
                  face, each face being substantially flush with the  
                  base of the housing; and  
                  a reinforcement band disposed about the  
20                 lower end of the housing, said reinforcement band  
                  being molded in said housing, said reinforcement band  
                  being retained in location by an undercut design;  
                  said insulative housing being molded to said  
                  stator core and enveloping the stator assembly except  
25                 for the faces of the first and second outer pole  
                  pieces and of the central pole piece, said insulative  
                  housing being reinforced by said reinforcement band  
                  against expanding cavity pressure developed within the  
                  assembly by fuel pressure within the fuel injector  
30                 valve.

                  8. A solenoid stator assembly as recited  
                  in claim 7, wherein said reinforcement band is  
                  substantially annular.

9. A solenoid stator assembly as recited in claim 7, wherein said reinforcement band extends a predetermined distance upwardly from the base of the 5 housing.

10. A solenoid stator assembly as recited in claim 7, wherein said insulative housing includes mounting portions adapted to receive securing means 10 for securing said insulative housing to said fuel injector valve.